

A method for the design of VSP surveys for the purpose of imaging a reef in the formations surrounding the well in question. The basic steps include:

- 5       - building a geophysical model;
- defining receiver locations in the well within the model;
- defining the target (reef);
- ray tracing from receivers to surface via target;
- defining source locations on surface based on ray density pattern; and
- 10     - validate by ray tracing from source locations to receiver locations via target.